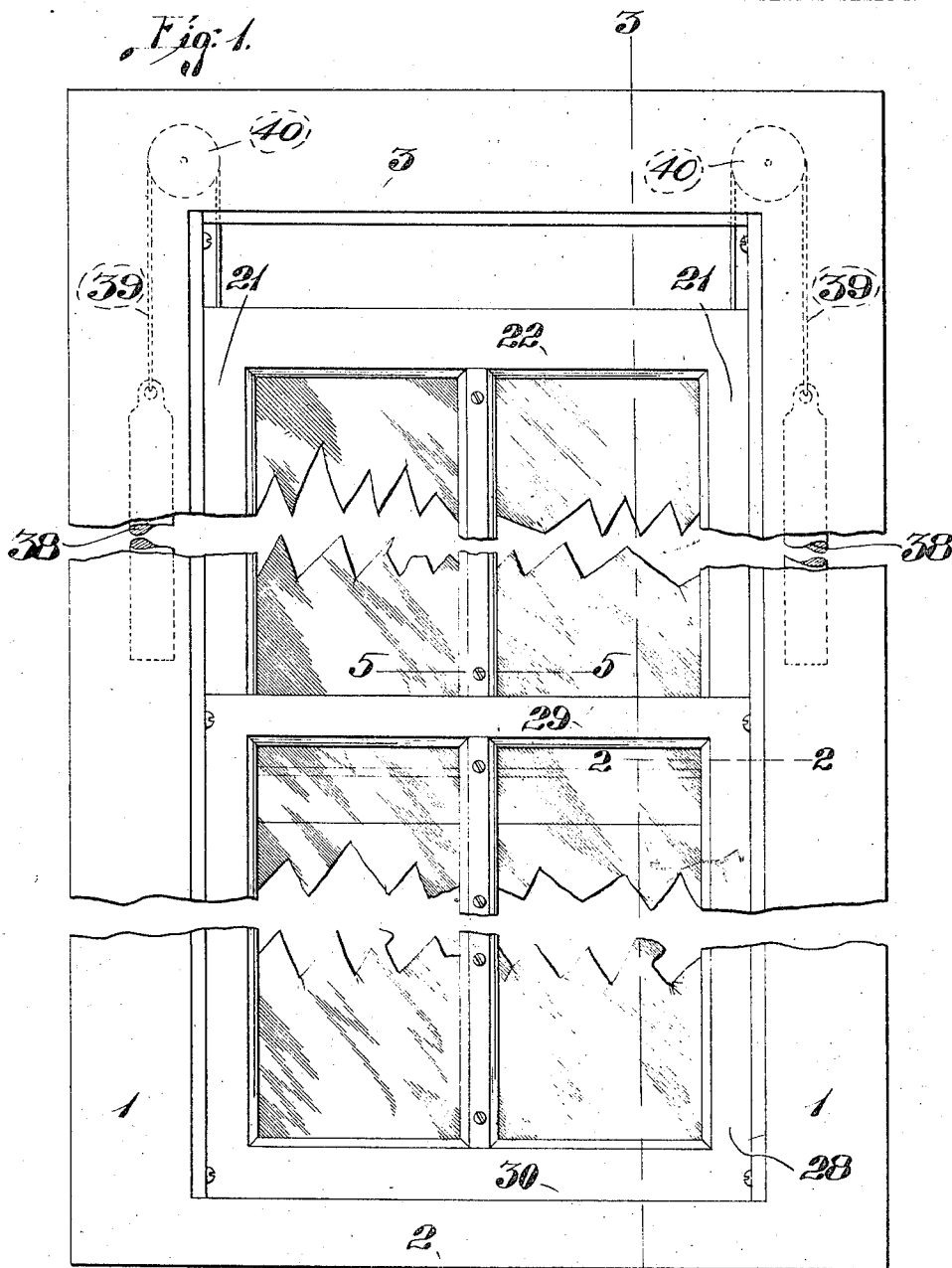


1,028,391.

J. F. RUTH.
METALLIC WINDOW.
APPLICATION FILED MAY 21, 1907.

Patented June 4, 1912.

2 SHEETS—SHEET 1.



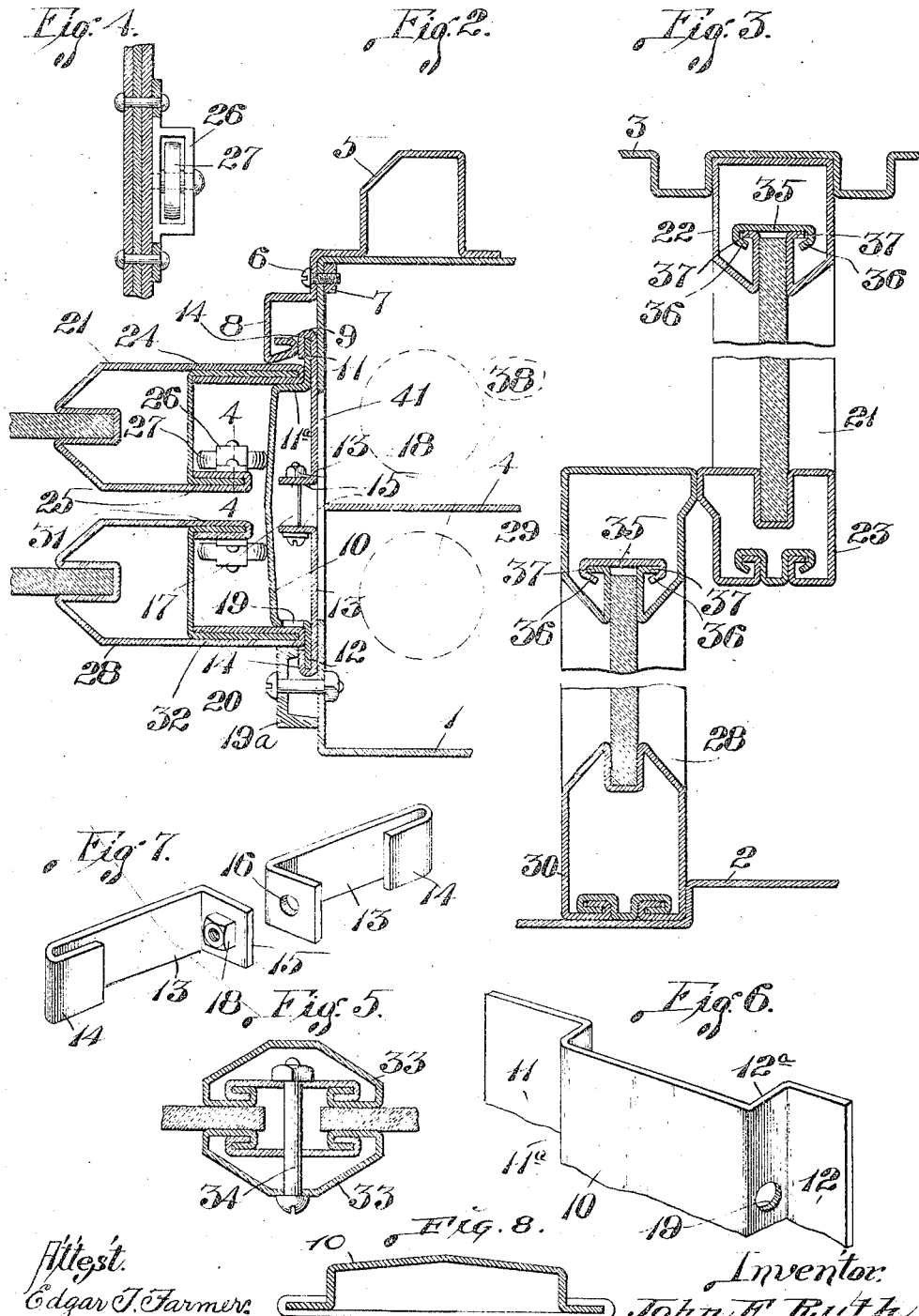
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UNITED STATES PATENT OFFICE.

JOHN F. RUTH, OF ST. LOUIS, MISSOURI

METALLIC WINDOW.

1,028,391.

Specification of Letters Patent.

Patented June 4, 1912.

Application filed May 21, 1907. Serial No. 374,930.

To all whom it may concern:

Be it known that I, JOHN F. RUTH, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Metallic Windows, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to metallic windows, and has for its object to provide a cushion plate on one or both sides of the window frame, against which engage portions of the side rails of the window sash, and which cushion plate is provided with adjusting devices whereby the degree of friction between the cushion plate and the sash is regulated.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is an elevation of a metallic window of my improved construction; Fig. 2 is an enlarged horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is an enlarged vertical section taken on the line 3—3 of Fig. 1; Fig. 4 is an enlarged detail section taken on the line 4—4 of Fig. 2; Fig. 5 is an enlarged horizontal section taken on the line 5—5 of Fig. 1; Fig. 6 is a perspective view of a portion of the cushion plate I make use of in carrying out my invention; Fig. 7 is a perspective view of one of the adjusting devices made use of on the cushion plate; Fig. 8 is a sectional view of one of the cushion plates with a non-adjustable clamp thereon.

The frame of my improved metallic window comprises the upright portions 1, the lower sill portion 2, and the top portion 3, all constructed of suitable sheet metal; and the side portions 1 are divided by the vertically arranged plates 4 so as to form vertically disposed pockets for the window weights. Located on the outer faces of the side portions 1 of the frame are the vertically disposed sheet metal sections 5, which are held to the parts 1 by screws 6 entering nuts 7 fastened to the portions 1; and integral with the sections 5 are the vertically disposed beads or stops 8, which are positioned against the inner faces of the por-

tions 1, and which form stops against which the outer faces of the top sash engage. The inner ends of these beads or stops are bent inwardly to form the resilient tongues 9, which normally bear upon the faces of the inner walls of the portions 1.

The cushion plates 10 made use of in my improved window are constructed of sheet metal, and provided at their edges with the flanges 11 and 12, and formed between said flanges and the central portions of said plates are shoulders 11^a and 12^a. A plurality of adjusting devices are located on the inside of each cushion plate 10, and said adjusting devices each comprise a pair of plates 13, the outer ends of which are bent into hooks 14, which engage the flanges 11 and 12; and the inner ends of said plates are bent laterally, as designated by 15, and through one of said laterally bent ends is formed an aperture 16, through which passes a screw 17, the threaded end of which engages in a nut 18 fixed upon the laterally bent end of the opposite plate. Apertures such as 19 are formed through the shoulder 12^a, directly opposite the heads of the screws 17, in order that a screw driver may be inserted through the cushion plate to engage the head of the screw 17 for the purpose of loosening or tightening the plates 13 of the adjusting device. The cushion plates carrying the adjusting devices arranged at suitable intervals apart are positioned against the inner walls of the portions 1 of the frame, with the flanges 11 engaging beneath the resilient tongues 9 of the stops 8. Channel bars 19^a are secured to the inner faces of the portions 1 by means of screws 20 in such a manner as to engage the edges of the flanges 12, thus rigidly securing the cushion plates 10 in position, and also forming stops against which the outer faces of the side rails of the lower sash engage.

The upper sash comprises the side rails 21, the top rail 22, and bottom rail 23, all constructed of sheet metal, and said side rails 21 being provided on their rear edges with the vertically disposed flanges 24, which engage between the shoulders 11^a of the cushion plates 10 and the resilient tongues 9 of the beads or stops 8. Formed integral with the inner faces of the side rails 21 are flanges 25, and fixed on the inner faces of said flanges, at suitable distances

apart, are housings 26, in which are journaled for rotation anti-friction rollers 27, the peripheries of which bear against the outer surfaces of the central portions of the cushion plates 10.

The lower sash comprises the side rails 28, top rail 29, and bottom rail 30, all constructed of sheet metal; and formed integral with the rear outer corners of the side rails 28 are the vertically disposed flanges 31, on the inner faces of which are arranged housings and anti-friction rollers, counterparts of the housings 26 and anti-friction rollers arranged on the flanges 25, and previously described. Integral with the forward outer corners of the rails 28 are the flanges 32, which engage between the shoulders 12^a of the cushion plates 10 and the channel bars 19^a.

Each sash is adapted to receive two lights, or sections of glass, and the meeting edges of said sections of glass, at the center of the sash are joined by a pair of sheet metal rails 33, which are connected to one another by screws 34.

The ends of both pairs of side rails 21 and 28 are open, and arranged to slide horizontally through said open ends are sheet metal plates 35, the side edges of which are bent to form flanges 36, which engage corresponding flanges 37, which are formed on the inner ends of the sections of sheet metal from which the rails 22 and 29 are formed.

The construction just described permits the sections of glass to be readily inserted in the sash, and after the rails 33 are properly positioned and connected to one another, the sections of glass are very rigidly held in position, and air and water proof joints are formed between the edges of the sections of glass and the rails forming the sash.

The sash of my improved window are counterbalanced by the usual weights 38 connected by the chains or tapes 39 passing over pulleys, such as 40, which weights are positioned within the portions 1 of the window frame, being originally inserted through openings 41 formed in the inner walls of said frames beneath the cushions 10.

In assembling my improved window, the sections 5 are positioned on the portions 1 of the frame, both the upper and lower sash arranged in the frame, and the weights placed in the frame through the opening 41, and the chains or cables arranged over the pulleys located in the upper corners of the frame. The lower sash is then shifted forward a sufficient distance to clear the window frame, so that the cushion plates may be arranged against the inner faces of the portions 1, with the flanges 11 engaging beneath the tongues 9. The lower sash is now swung into position with its flanges 32 engaging against the shoulders 12^a, after which

the channel bars 19^a are secured in position by means of the screws 20, thus maintaining the sash in proper operative position.

In assembling the window, or at any time after the same has been assembled and in use, the central portion of the cushion plate can, if desired, be bent outwardly by tightening the screw 17 so as to draw the plates 13 and ends 11 and 12 of the cushion plate together; and thus the central portion of said cushion plate is brought to bear against the anti-friction rollers 27; and the movements of the sash laterally relative to the cushion plates can thus be regulated as desired.

A metallic window of my improved construction is simple and inexpensive, is easily assembled or taken apart, is dust and water proof, and the friction between the cushion plates on the window frame and the side rails of the window sash can be regulated as desired.

If desired, the cushion plate on one side of the window frame may be provided with a non-adjustable clamp or keeper, as shown in Fig. 8, and the cushion plate on the opposite side of the window being provided with the adjustable device seen in Fig. 7.

I claim:—

1. In a window of the class described, a sheet metal frame, cushion plates arranged against the faces of the side portions thereof, there being parallel shoulders formed on said plates adjacent the edges thereof, means whereby said plates are detachably held on the frame, metal sash arranged for operation in the window frame, and there being elongated flanges formed on the side rails of the sash for engaging between the shoulders on the cushion plates and the means which hold said plates on the frame.

2. In a window of the class described, a sheet metal frame, cushion plates arranged against the faces of the side portions thereof, there being parallel shoulders formed on said plates adjacent the edges thereof, metal stops whereby said plates are detachably held on the frame, metal sash arranged for operation in the window frame, there being elongated flanges formed on the side rails of the sash for engaging between shoulders on the cushion plates and the stops which hold said plates on the frame, and anti-friction rollers carried by the side rails of the window sash for engaging the faces of the cushion plates.

3. In a window of the class described, a sheet metal frame, cushion plates arranged against the faces of the side portions thereof, there being parallel shoulders formed on said plates adjacent the edges thereof, means whereby said plates are detachably held on the frame, metal sash arranged for operation in the window frame, there being elongated flanges formed on the side rails of

the sash for engaging between the shoulders on the cushion plates and the means which hold said plates on the frame, anti-friction rollers carried by the side rails of the frame for engaging the cushion plates, and means whereby the central portions of the cushion plates are adjusted toward the anti-friction rollers.

4. In a window of the class described, a frame, sash operating therein, cushion plates arranged between the side rails of the sash and the frame, means arranged on said cushion plates independent of the frame whereby the central portions of the cushion plates are adjusted inwardly and outwardly, anti-friction rollers carried by the side rails of the window sash, which rollers engage the faces of the cushion plates, and means for holding the cushion plates in place upon the frame.

5. In a window of the class described, a frame, sash arranged for operation therein, cushion plates arranged between the sides of the frame and the sides of the sash, means whereby the central portions of the cushion plates are adjusted to and from the side rails of the sash independent of the frame or sash, and there being openings in the frame beneath the cushion plates through which the counterbalancing weights of the sash are inserted.

6. In a window of the class described, a sheet metal frame, sash arranged for operation therein, a cushion plate arranged between the side rails of both sash and the jamb of the window frame, means detachably clamped to the window frame for engaging the side edges of the cushion plate, and means whereby the central portion of the cushion plate is adjusted to and from the inner edges of the side rails of the sash, which last mentioned means are carried solely by the cushion plate and are independent of the frame and sash.

7. In a window of the class described, a sheet metal frame, sash arranged for operation therein, a single cushion plate arranged against the jamb of the window frame and engaging the outer edges of both the side rails of the window sash, means whereby the edges of the cushion plate are adjustably and detachably clamped to the window frame, and means whereby transverse camber is imparted to the central portion of the cushion plate, which last mentioned means are carried by the cushion plate independently of the frame or sash.

8. In a window of the class described, a sheet metal frame, sash arranged for operation therein, a single cushion plate arranged against the jamb of the window frame and engaging the outer edges of both the side rails of the window sash, means whereby the edges of the cushion plate are adjustably and detachably clamped to the

window frame, and means carried solely by the cushion plate and independent of the frame and sash, whereby the central portion of the cushion plate is adjusted and held to a desired adjustment to and from the inner edges of the side rails of the sash.

9. The combination with a window frame having a jamb, of stops located on the jamb, an auxiliary jamb positioned between the stops, means carried by the auxiliary jamb independent of the jamb proper for moving the central portion of the auxiliary jamb toward or away from the jamb proper, and a window sash arranged to be embraced by the stops and the auxiliary jamb.

10. The combination with a window frame having a jamb, of stops located on the jamb, an auxiliary jamb positioned between the stops, means carried by the auxiliary jamb independent of the jamb proper for moving the central portion of the auxiliary jamb toward or away from the jamb proper; and a window sash having a flange arranged to be embraced by the stops and the auxiliary jamb.

11. The combination with a window frame having a jamb, of stops located on the jamb, an auxiliary resilient jamb positioned between the stops, means carried by the auxiliary jamb independent of the jamb proper for moving the central portion of the auxiliary jamb toward or away from the jamb proper; and a window sash arranged to be embraced by the stops and the auxiliary jamb.

12. The combination with a window frame, of inside and outside stops arranged on said frame, a cushion plate arranged between the stops, and means positioned beneath the cushion plate and engaging the side edges thereof for adjusting the central portion of said cushion plate.

13. The combination with a window frame and the sashes therein, of an auxiliary jamb on the frame engaging the side rails of the sashes, and means engaging the side edges of said jamb for varying the sectional dimensions of the central portion of said jamb.

14. The combination with a window frame and window sash, of an auxiliary jamb arranged between the frame and the sash, and means arranged beneath the jamb and engaging the side edges thereof for varying the contour of the face of the jamb.

15. The combination with a window frame and window sash, of auxiliary jambs arranged between the frame and sash, means located beneath said jambs and engaging the side edges thereof for varying the contour of the faces of the jambs, and means for maintaining the sash in operative position between the jambs.

16. The combination with a window frame having a jamb, of stops located on the

jamb, an auxiliary sheet metal jamb positioned between the stops, means carried solely by the auxiliary jamb for cambering the central portion and moving the central portion toward or away from the jamb proper, and a window sash having a flange arranged to be embraced by the stops and the auxiliary resilient jamb.

17. The combination with a window frame having a jamb, of stops located on the jamb, an auxiliary, sheet metal jamb positioned between the stops, means carried by the auxiliary jamb and independent of the jamb for adjusting the auxiliary jamb relative to the jamb and a window sash having a flange arranged to be embraced by the stops and the auxiliary jamb.

18. The combination with a window frame having a jamb, of an auxiliary jamb, stops secured to the jamb and engaging the auxiliary jamb in such manner as to prevent movement of the sides of the auxiliary jamb and means whereby the body of the auxiliary jamb, between its sides, is moved laterally from the jamb proper which last mentioned means are carried solely by the auxiliary jamb.

19. The combination with a window frame and the sashes operating between the jambs thereof, of an auxiliary jamb located between the jambs of the frame and the side rails of the sashes; there being parallel shoulders formed on said auxiliary jambs adjacent the side edges thereof, flanges on the side rails of the sashes, which flanges engage against the shoulders on the auxiliary jambs, stops arranged on the jambs of the frame and engaging against the flanges on the rails of the sashes, and means for expanding the central portions of the auxiliary jambs between the parallel shoulders to limit the movement of the sashes to and from the jamb.

20. The combination with a window frame and window sashes, of stops located on one of the jambs of the window frame, an auxiliary jamb between said stops, there being parallel shoulders formed on said auxiliary jamb adjacent its edges, flanges on the side rails of the sashes, and which flanges are positioned between the shoulders of the auxiliary jamb and the stops.

21. The combination with a window frame having a jamb, of an auxiliary jamb, stops, one of which is detachable, secured to the jamb and engaging the auxiliary jamb in such manner as to prevent movement of the sides of the auxiliary jamb and means whereby the body of the auxiliary jamb, between its sides, is moved laterally from the jamb proper, which last mentioned means are independent of the jamb and stops.

22. In a window, the combination with the frame and window sashes, which latter are

provided on their side rails with laterally projecting flanges of a single cushion plate arranged between the side rails of the sash and the window jamb, and which cushion plate engages a corresponding pair of the flanges on the side rails of both sashes, means for varying the sectional dimensions of said cushion plate, and stops arranged on the window frame and engaging the cushion plate and the flanges of the sashes.

23. In a window of the class described, a metal frame, metal sashes arranged for operation therein, a cushion plate arranged upon the window jamb and engaging the side rails of both sashes, means carried by said cushion plate for varying its sectional dimensions, anti-friction rollers carried by the side rails of the window sash and bearing upon the face of the cushion plate, and stops engaging the sides of the cushion plate and the side rails of the sashes.

24. The combination with a window frame, of sashes arranged for operation therein, flanges arranged on the side rails of said sash, an auxiliary jamb arranged on the frame and engaging against the flanges of the sashes, stops arranged on the window frame and engaging the sides of the auxiliary jamb and the flanges of the sashes, and means for varying the sectional dimensions of that portion of the auxiliary jamb between the flanges.

25. In a window of the class described, a frame, sashes arranged for operation therein, stops on the frame and engaging the side rails of the sashes, cushion plates arranged between the side rails of the sashes and the window frame, and there being openings formed in the window frame beneath the cushion plates to permit the insertion of the counterbalancing weights for the sashes.

26. The combination with a window frame and the sashes therein, of stops on the frame engaging the side rails of the sashes, a cushion plate arranged on one of the jambs of the frame, which cushion plate is adjustable to and from the side rails of the sashes, and there being an opening formed in the jamb of the frame beneath the cushion plate for the insertion of the sash weights.

27. In a window of the class described, a combined cushion plate and parting strip constructed of a single piece of material and adapted to be positioned against the jamb of the window frame and to bear against the side rails of both sashes, the central portion of which cushion plate is adjustable to and from the side rails of both sashes, and stops engaging the edges of the cushion plate and against the side rails of the sashes.

28. The combination with a window frame and the sashes therein, of a combined jamb and cushion plate located between the frame and the side rails of the sashes, the central

portion of which jamb and plate is adjustable, flanges integral with the sides of the cushion plate, which flanges lie flat against the face of the window frame, and stops arranged on the frame and engaging said flanges.

29. The combination with a window frame and the sashes therein, of a combined jamb and cushion plate interposed between the frame and the side rails of the sashes, flanges integral with the sides of the cushion plate, which flanges bear flat against the face of the window frame, the central portion of which jamb and plate is adjustable, and means whereby the central portion of said jamb and plate is held in its adjusted position.

30. The combination with a window frame and sashes provided with flanges, of a transversely elastic auxiliary jamb and cushion plate arranged on the frame and engaging the flanges on the side rails of the sashes, and the central portion of which jamb and plate may be sprung relative to the side rails of the sashes and the window frame.

31. The combination with a window frame having a jamb, of a transversely elastic auxiliary jamb positioned on the jamb of the frame, stops located on the jamb, and said stops being spaced apart from the auxiliary jamb so as to form slots which extend the entire height of the window, window sashes arranged for operation in the window

frame, and flanges on the side rails of the sashes, which flanges operate in the slots. 35

32. The combination with a window frame having jambs, stops located on the jambs and auxiliary transversely elastic jambs positioned between the stops, of a window sash having flanges arranged to be embraced by the stops and the auxiliary jambs. 40

33. In combination with a metallic window frame and a sash operating within the frame, of flexible, metallic, auxiliary jambs, means for securing the side margins of the auxiliary jamb to the window frame, means for bending the body portion of the auxiliary jamb between its side margins toward or away from the frame and means for securing the auxiliary jamb after it is bent to the desired shape. 45 50

34. In combination with a frame and a sash, an auxiliary jamb interposed between the frame and sash, and means for varying the sectional dimensions of the auxiliary jamb whereby lateral movements of the sash relative the frame may be limited and controlled. 55

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses. 60

JOHN F. RUTH.

Witnesses:

M. P. SMITH,
E. L. WALLACE.